

CLAIMS

1. An electric power steering device to transmit an auxiliary power by an electric motor to steering mechanism of a vehicle via speed reduction gear mechanism, the speed reduction gear mechanism comprising:

a driven gear, that is a resin gear, having a resin part with gear teeth formed on the outer peripheral surface thereof and integrally formed on the outside of a metal core;

a drive gear that meshes with the driven gear; and

grease present at least between the driven gear and the drive gear,

wherein the resin part of the resin gear is composed of a resin composition having a polyamide resin, as a base resin, containing 10 to 50 % by weight of glass fiber having a diameter in the range of from 5 to 9 μm , and the grease is composed of a base oil formed mainly of at least one oil selected from mineral oil, poly α -olefin oil, and alkyl polyphenyl ether, a thickener, and 3 to 10% by weight of a wax having a melting point or softening point in the range of from 70 to 130°C.

2. The electric power steering device according to claim 1, wherein an adhesive layer composed of a silane coupling agent having either one of epoxy group or amino group on one end thereof is provided between the metal core and the resin part of the

resin gear.

3. The electric power steering device according to claim 1, wherein the diameter of the glass fiber contained in the resin part of the resin gear is in the range of from 6 to 8 μm .

4. The electric power steering device according to claim 1, wherein the length of the glass fiber contained in the resin part of the resin gear is in the range of from 100 to 900 μm .

5. The electric power steering device according to claim 1, wherein the resin part of the resin gear is composed of a resin composition having the polyamide resin, as the base resin, with the glass fiber partially substituted by carbon fiber.

6. The electric power steering device according to claim 1, wherein the driven gear and the drive gear are in a form of worm wheel, helical gear, spur gear, bevel gear, or hypoid gear.

7. A resin gear suitable for power transmission,
the resin gear having a resin part with gear teeth formed on the outer peripheral surface thereof and integrally formed on the outside of a metal core,

the resin part being composed of a resin composition having

a polyamide resin, as a base resin, containing 10 to 50 % by weight of glass fiber having a diameter in the range of from 5 to 9 μm .

8. The resin gear according to claim 7, wherein an adhesive layer composed of a silane coupling agent having either one of epoxy group or amino group on one end thereof is provided between the metal core and the resin part.

9. The resin gear according to claim 7, wherein the diameter of the glass fiber contained in the resin part is in the range of from 6 to 8 μm .

10. The resin gear according to claim 7, wherein the length of the glass fiber contained in the resin part is in the range of from 100 to 900 μm .

11. The resin gear according to claim 7, wherein the resin part is composed of a resin composition having the polyamide resin, as the base resin, with the glass fiber partially substituted by carbon fiber.

12. The resin gear according to claim 7, wherein the resin gear is a worm wheel, a helical gear, a spur gear, a bevel gear,

or a hypoid gear.